

Remarks/Arguments

Response to Office Action, Paragraphs 1-6

Noted.

Response to Office Action, Paragraphs 7-8

The abstract of the disclosure is objected to for having multiple paragraphs and not being within the range of 50-150 words.

The abstract has been amended, as reflected on page 2 of this response, to overcome the objections. In particular, the abstract has been reduced to a single paragraph within the range of 50-150 words. Furthermore, legal phraseology has been avoided. Therefore, the abstract is now in condition for allowance.

Response to Office Action, Paragraphs 9-16

Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rougier et al. (Solid. St. Ion. 1996, V90, PP 83-90).

With respect to claim 1, claim 1 as amended recites subject matter not disclosed, taught, suggested, or motivated by Rougier. For instance, Rougier does not disclose or teach “[a] compound of lithium nickel cobalt metal oxide having a formula, $Li_aNi_{1-b-c}Co_bM_cO_2$. . . wherein the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10” (emphasis added), as recited in claim 1 as amended. It is important to note that the compound recited in claim 1 as amended includes a metal, M. Furthermore, taking into account the metal M, the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10. Additionally, the Ni and M are dependent on a common variable since, in the recited formula, $Li_aNi_{1-b-c}Co_bM_cO_2$, Ni and M are dependent on the variable c. Thus, a compound of lithium nickel cobalt metal oxides is achieved, where the compound exhibits excellent electrochemical properties with no formation of halite magnetic domains.

At best, Rougier discloses a chemical formula $\text{LiNi}_{1-y}\text{Co}_y\text{O}_2$. (Rougier, pg. 84, col. 2, para. 2). However, this chemical formula does not teach having a metal; nor does the chemical formula $\text{LiNi}_{1-y}\text{Co}_y\text{O}_2$ from Rougier teach that the metal and the Ni are dependent on a common variable (as recited in the chemical formula $\text{Li}_a\text{Ni}_{1-b-c}\text{Co}_b\text{M}_c\text{O}_2$ from claim 1 as amended). Furthermore, Rougier lacks any disclosure that the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10 (as recited in claim 1 as amended). Thus, Rougier does not anticipate or render obvious claim 1 as amended. Therefore, for at least these reasons, claim 1 as amended overcomes the 35 U.S.C. 102(b) rejection and the 35 U.S.C. 103(a) rejection, and is in condition for allowance.

Response to Office Action, Paragraphs 17-20

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over, Matsubara (US 6,045,771).

With respect to claim 1, claim 1 as amended recites subject matter not disclosed, taught, suggested, or motivated by Matsubara. For instance, Matsubara does not disclose or teach “[a] compound of lithium nickel cobalt metal oxide having a formula, $\text{Li}_a\text{Ni}_{1-b-c}\text{Co}_b\text{M}_c\text{O}_2$. . . wherein the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10” (emphasis added), as recited in claim 1 as amended. It is important to note that the compound recited in claim 1 as amended includes a metal, M, and cobalt. Furthermore, taking into account the metal M, the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10. Additionally, the Ni and M are dependent on a common variable since, in the recited formula, $\text{Li}_a\text{Ni}_{1-b-c}\text{Co}_b\text{M}_c\text{O}_2$, Ni and M are dependent on the variable c. Thus, a compound of lithium nickel cobalt metal oxides of this invention is achieved, where the compound exhibits excellent electrochemical properties with no formation of halite magnetic domains.

At best, Matsubara discloses a chemical formula $\text{Li}_{y-x_1}\text{Ni}_{1-x_2}\text{M}_x\text{O}_2$. (Matsubara, Abstract, line 3). However, this chemical formula does not include cobalt and a metal, as recited in claim 1 as amended. The abstract of Matsubara teaches that “wherein M represents one selected from the group consisting of Al, Fe, Co, Mn and Mg” (emphasis added). Thus, Matsubara teaches that only either Co or a metal can be selected; whereas, in claim 1 as amended, both Co and a metal

are included. Clearly, Matsubara teaches away from claim 1 as amended. Furthermore, Matsubara lacks any disclosure that the ratio of the molar content of Li/(Li+Co+M) is between 1.01 and 1.10 (as recited in claim 1 as amended). Thus, Matsubara does not anticipate or render obvious claim 1 as amended. Therefore, for at least these reasons, claim 1 as amended overcomes the 35 U.S.C. 102(b) rejection and the 35 U.S.C. 103(a) rejection, and is in condition for allowance.

With respect to claim 2, claim 2 as amended recites subject matter not disclosed or taught by Matsubara. For instance, Matsubara does not teach that the “the volume of said crystalline granules is less than 10% of the volume of said compound of lithium nickel cobalt metal oxide”, as recited in claim 2 as amended. Furthermore, claim 2 as amended is at least in condition for allowance since claim 2 as amended depends from claim 1 as amended, an allowable claim as argued above. Therefore, for at least these reasons, claim 2 as amended overcomes the 35 U.S.C. 102(b) rejection and the 35 U.S.C. 103(a) rejection, and is in condition for allowance.

With respect to claims 3 and 4, these claims are at least in condition for allowance since they indirectly depend from claim 1 as amended, an allowable claim as argued above. Therefore, for at least this reason, claims 3 and 4 overcome the 35 U.S.C. 102(b) rejection and the 35 U.S.C. 103(a) rejection, and are in condition for allowance.

With respect to claim 5, the subject matter from claim 5 as amended overlaps with the subject matter from claims 1 as amended and 2 as amended. Thus, the arguments for patentability of claims 1 as amended and 2 as amended are incorporated here for the patentability of claim 5 as amended. Therefore, for at least these reasons, claim 5 as amended overcomes the 35 U.S.C. 102(b) rejection and the 35 U.S.C. 103(a) rejection, and is in condition for allowance.

Conclusion

The claims are patentable over the art of record at least for the above stated reasons. Accordingly, it is respectfully requested that the claims be allowed. Furthermore, the applicant respectfully requests that the Examiner reconsiders and withdraws the rejections to the claims and allows the application. If any matters can be resolved by telephone, applicant requests that the Patent and Trademark Office call the applicant at the telephone number listed below. The Examiner is thanked for his/her assistance.

Respectfully submitted,
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